

Date: Friday, 9/21/2007 12:59:28 PM  
User: Kim Johnston

# **Process Sheet**

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : CROSSTUBE EXTRUSION (206L)
Job Number : 34776	
Estimate Number : 10025	
P.O. Number :	Part Number : D6002115
This Issue : 9/21/2007 S.O. No. :	Drawing Number : D6002 REV A
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : RMA	Drawing Revision : A
Previous Run : 34684	Material :
Written By :	Due Date : 9/28/2008 Qty: 55 Um: Each
Checked & Approved By : <u>9/27/09 24</u>	
Comment : Est Rev B 00.12.15 Added: Issue P/O EC	

## **Additional Product**

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O 4660

0207/09/24

a) Extrude as per Dwg D6002

b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9

or QQ-A-200/11 ) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strenght=66 ksi

e) Material certification required

(55)

2.0	D6002115P	Crosstube material
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 55.0000 Each(s)

Crosstube material

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

(M 109291)

JS 08/09/16

4.0	QC6	DIMENSIONAL CHECK
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Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6002

S 08/09/17 (763)

counters

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION (206L)

Job Number: 34776

Part Number: D6002115

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: in front of stores

25 08.09.17

7.0

QC21

FINAL INSPECTION/W/O RELEASE



08/09/18 J

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



W 08.09.18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

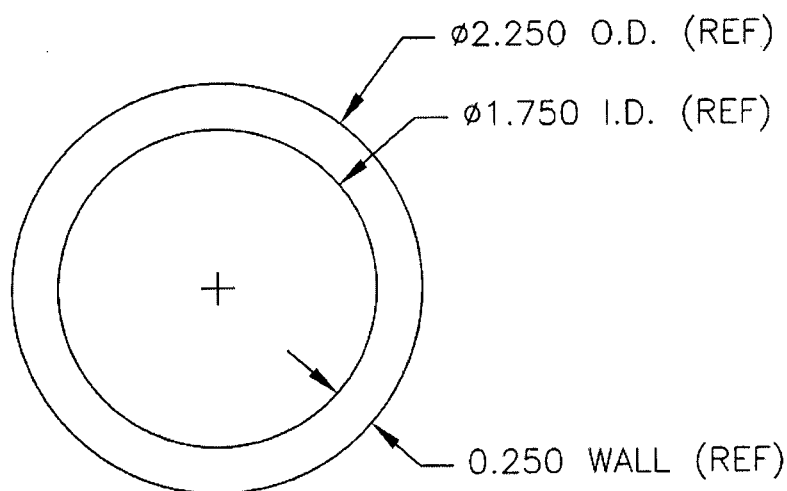
NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6002	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

**RELEASED**  
00.11.24



### NOTES

- 1) D6002-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 115" LONG TUBE: D6002-115

- 2) MATERIAL: 2.250 OD x 0.250 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  
WALL:  $\pm 0.008$  MEAN ( $\pm 0.025$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH

- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 34776

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## Packinglist ALUnna AG

Customer PO	PO. 00004660
ALUnna ref. no.	27068/1
Date:	08.12.08

**Boxmarking:**

Dart Aerospace Po. 00004660 D 6002-115
Made in Germany
Dest. Hawkesbury Ont. Canada

**We hereby declare that the wooden packing material are totally free from bark and apparently**

**free from live plant pests**

[illegible]

**ALUnna****Abnahmeprüfzeugnis 3.1 - EN 10204:2004****Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004****Kunde:** Dart Aerospace Ltd.**Zeugnisnummer:** 1174/08**Client:****Cert No. / No. du certificat:**1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada**Bestellnummer:** PO 00004660**Order No. / No. de commande****Produkt:** Rohre nahtlos gepresst**Auftrag:** 27068/1**Product / Produit:** Tubes seamless extruded**Our Reference/Notre Reference:****Spezifikation:** AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace D6001**Specification:****Werkstoff:** 7075**Zustand:** T 6511**Alloy/Alliage:****Temper/État****Abmessung:** 2,250 INCH x 1,750 INCH x 0,250 INCH x 115,000 INCH**Size / Dimension:** D6002-115 2.250 X 0.250 X 115**Kennzeichnung:** ALUnna - Cert No. 1174/08 - 7075 - T 6511 - Cast No. 1245 - AMS - QQA 200/11 - 2.250" OD X 0.250" Wall - Heat No. 1819 - Lot 27068/1-1 PO. 00004660**Marking/Marquage:****Lieferung**

pcs.

lbs

**Country of Manufacture: Germany****Delivered Material / Matériel délivré:**

63

1160

**1. Chemische Analyse****Chemical Analysis / analyse chimique**

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
1245/08	0,093	0,185	1,399	0,044	2,455	0,192	5,758	0,036	0,002	0,0167	0,0001	0,0011	0,0001

**Hydrogen content:** 0,11**ccm/100 g Al** Elements without indication < 0,01 %**country of melt manufacturer: Germany****2. Mechanische Eigenschaften****Mechanical Properties / Valeurs Mécaniques**

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min.	77,0	66,0				
max.						
1	82,070	74,530	11,0			1819 - 63 pcs.
2	82,650	75,255	10,0			

S  
08/09/12

RMS: outside 25 - max. 8,5 µ"

**Ergebnis der Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

**Resultats:**

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

Kramper

Certified acc. DIN EN ISO 9001:2000 and DIN EN 9100:2003  
valid until 2010-11-11

Cert.- Reg. No.: 001959 QM; 001959 ASH

**ALUnna**

Abnahmebeauftragter

11.08.2008

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany